

2016

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### Recommended Citation

Sharma, U., & Salend, S. J. (2016). Teaching Assistants in Inclusive Classrooms: A Systematic Analysis of the International Research. *Australian Journal of Teacher Education*, 41(8).

Retrieved from <http://ro.ecu.edu.au/ajte/vol41/iss8/7>

This Journal Article is posted at Research Online.

<http://ro.ecu.edu.au/ajte/vol41/iss8/7>

## Teaching Assistants in Inclusive Classrooms: A Systematic Analysis of the International Research

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*Abstract: This article reviewed international data from English-language peer-reviewed studies on the use of TAs in inclusive classrooms from the past 10 years concerning: (a) the roles of TAs; (b) the impact of TAs on students, educators, and inclusive education; and (c) the factors that influence the performance of TAs. These studies suggest that unclear professional roles, limited communication and opportunities for collaboration and training for TAs and teachers contribute to TAs assuming significant instructional, classroom management, and socialization roles, and providing ineffective and separate instruction that inadvertently undermine the inclusion, learning, socialization and independence of students with disabilities and the pedagogical roles of their teachers. Recommendations to inform decisions about whether to employ TAs and ways to enhance the efficacy and the practices of TAs and the professionals who work with them are discussed as well as the limitations of this review and implications for future research.*

### Introduction

Teaching assistants (TAs), also referred to as paraprofessionals, teacher aides, and paraeducators are increasingly being employed to support the inclusion of students with disabilities into general education classrooms in many developed countries throughout the world (Butt, 2016; Douglas, Chapin, & Nolan, 2016; Egilson & Traustadottir, 2009; Keating & O'Connor, 2012; Radford, Bosanquet, Webster, & Blatchford, 2015). With the goal of providing teachers with more opportunities to interact with students with disabilities and to collaborate with other professionals (Giangreco, 2013), TAs perform a range of non-instructional roles (Harris & Aprile, 2015) and appropriately trained and supervised TAs may deliver complementary instructional services designed to supplement rather than replace the instruction provided by teachers (Giangreco, 2013; Salend, 2016).

As the presence of TAs has grown in popularity, there has been an emerging research base addressing their professional roles, efficacy, training, and experiences. The results of prior research reviews show that TAs: (a) perform a variety of roles that were generally viewed positively by teachers, TAs, students and parents; (b) often assume primary instructional roles which may hinder the performance of students and should be the responsibility of trained teachers; (c) can foster improved academic, behavioral and social outcomes for students when they are appropriately trained and supervised and; (d) rarely receive adequate training and supervision (Ashbaker & Morgan, 2012; Brock & Carter, 2013; Cajkler & Tennant 2009; Farrell,

Alborz, Howes & Pearson, 2010; Giangreco, Suter, & Doyle, 2010; Rispoli, Neely, Lang, & Ganz, 2011; Saddler, 2014; Walker & Smith, 2015). However, the findings of these prior reviews did not include articles published in the last five years (Cajkler, & Tennant, 2009; Farrell et al., 2010; Giangreco, Suter, & Doyle, 2010), did not focus solely on TAs in general education settings (Brock & Carter, 2013; Rispoli et al., 2011; Walker & Smith, 2015), or did not employ a systematic methodology for identifying, selecting, and synthesizing empirical studies (Ashbaker & Morgan, 2012; Giangreco et al., 2010; Saddler, 2014). Furthermore, these reviews were based primarily on research from the United States and the United Kingdom and did not reflect an international perspective.

In light of the growing international use of TAs and evolving research surrounding their use in inclusive classrooms, there is a need to re-examine the roles, efficacy, training and experiences of TAs based on more recent research and from an international perspective (Egilson & Traustadottir, 2009). Therefore, we conducted a systematic review of the empirical studies addressing TAs working in inclusive classrooms to provide a synthesis of the current and international peer-reviewed research. The systematic review addressed the following research questions: (a) What roles are TAs assuming to support educators and students in inclusive classrooms?; (b) How do the roles performed and supports provided by TAs in inclusive classrooms impact students, educators and inclusive education?; and (c) What factors influence the performance of TAs in inclusive classrooms? Based on the synthesis, recommendations to inform decisions about whether to employ TAs and ways to enhance the efficacy and the practices of TAs and the professionals who work with them are discussed. The limitations of this review and implications for future research also are presented.

## Methods

### Search and Selection Procedures

A systematic and rigorous search and selection methodology was employed to identify the studies that were included in this research synthesis. Searches of the ERIC, PsycInfo, and Google Scholar databases were conducted to identify relevant peer-reviewed empirical studies regarding teaching assistants in inclusive classrooms that were published in English from 2005 to 2015. These databases were searched using the following primary keywords: *teaching assistants, classroom assistants, classroom aides, learning support staff, paraprofessionals, teacher aides, paraeducators, integration aides, learning support assistants, inclusion, inclusive education, inclusive classrooms, mainstreaming, general education, regular education, students with disabilities, and students with special education needs*. An examination was performed to ensure that duplicates of identified studies appearing in more than one of the databases were reviewed only once. The titles and abstracts of all of the identified studies were then examined to assess whether the study was likely to meet the inclusion criteria in the review and warranted further examination. The full text of the studies warranting further examination were then screened for the final review according to the following criteria. Studies were excluded if they did not: (a) focus on TAs or the other related terms as mentioned or defined in this article; (b) relate to the education or learning of students with disabilities or at-risk students; (c) address inclusive/mainstream/regular or general education for preschool, primary or secondary level students; (d) present empirical data from primary sources; or (e) appear in full-text in peer-reviewed journals from 2005 to 2015. Studies were included if they: (a) were based on primary empirical research on TAs (e.g. impact studies, surveys, case studies, experimental research,

single subject designs, observational research, qualitative studies involving interviews, audio recording, artifact analysis, and focus group discussions); and (b) investigated issues related to (1) the efficacy of TAs, (2) the experiences, perceptions, training, and roles and responsibilities of TAs, (3) the relationships between TAs and students with disabilities and TAs and teachers, and (4) the perceptions of students, and teachers regarding TAs.

Using the identified search process, a total of 176 studies were initially identified from the databases (ERIC-82, Google Scholar 66, and PsycInfo-28). After eliminating 79 duplicates, the titles and abstracts of 97 studies were then checked to verify that the studies had relevant information addressing the objectives of the present review. After screening for relevance, a total of 48 studies were selected to undergo a comprehensive review based on the exclusion/inclusion criteria set for this study. Of the 48 studies reviewed, 20 were excluded because they did not fit the criteria for inclusion in the study. After employing this process, 28 articles met the selection criteria and were included in the review.

To identify relevant studies that did not appear in the online search of the databases, the reference lists of articles meeting the study's inclusion criteria were examined as well as references appearing in the current bibliographies maintained by web sites addressing research related to teacher assistants and paraprofessionals (i.e., Center on Disability and Community Inclusion, PARAProfessional Resource & Research Center). Thirty-three studies were identified from bibliography checks for inclusion in the review, which made for total of 61 studies that met the inclusion criteria.

### **Coding and Interrater Reliability**

Using the inclusion/exclusion criteria, the determination of whether to include a study in the review was initially made by one individual and then reviewed by a second person. If there were disagreements between the two individuals about whether the study was appropriate for this review, both individuals re-examined the study and discussed it to reach an agreement about whether the study should be included in the review.

The 61 studies were coded according to the research methodology which included the methods, data collection strategies, participants and settings, and the main findings. When questions concerning the codes arose, both coders reviewed the articles and agreed upon the correct codes. To establish the reliability of the coding process, the two authors independently coded 14 studies (23 percent). Interrater agreement was computed by using the formula of  $\text{Agreements}/(\text{Agreements} + \text{Disagreements})$  multiplied by 100, which yielded an interrater reliability of 94.5%

## **Results**

### **Descriptive Statistics**

The 61 studies were conducted in 11 countries including the United States ( $n=26/43\%$ ), United Kingdom ( $n=18/30\%$ ), Australia ( $n=7/11\%$ ), New Zealand ( $n=3/5\%$ ), Ireland ( $n=2/3\%$ ), Canada ( $n=1/2\%$ ), Cyprus ( $n=1/2\%$ ), Finland ( $n=1/2\%$ ), Iceland ( $n=1/2\%$ ), Italy ( $n=1/2\%$ ), and Norway ( $n=1/2\%$ ), with one study conducted in the United Kingdom and Italy (Devecchi, Dettori, Doveston, Sedgwick & Jament, 2012). Of the 61 studies that met the inclusion/exclusion criteria, 24 (39%) employed qualitative designs, 23 (38%) employed quantitative designs, and 14

(23%) employed mixed methods designs. The most frequently used data collection strategies were interviews (n=35/57%), observations (n=22/36%), surveys (n=19/31%), standardized assessment (n=12/20%), artifacts (n=5/8%), audio recordings (n=4/7%), journal/diaries (n=2/3%), timelogs (n=1/2%), and case studies (n=1/2%), with 31 (51%) of the studies using multiple data collection strategies. Nine of the studies were based on larger data sets (Radford, Blatchford & Webster, 2011; Rubie-Davies, Blatchford, Webster, Koutsoubou, & Bassett, 2010; Rutherford, 2011; 2012; Symes & Humphrey, 2011; 2012; Webster & Blatchford, 2013; 2015; Webster, Blatchford, Bassett, Brown, Martin, & Russell, 2010) and one article reported on two studies (Vadasy, Sanders, & Peyton, 2006a). The number of participants in the studies ranged from 3 to 1867, with 49 (80%) studies composed of TAs, 31 (51%) studies composed of students, 29 (48%) studies composed of teachers (i.e., general education, mainstream, special education, and head teachers), 13 (21%) studies composed of administrators (i.e., school principals, line managers), and 7 (11%) studies composed of parents/carers. Forty (66%) of the studies were composed of more than one type of participant, and in seven (11%) studies the number of some of the participants were not specified (Bowyer-Crane et al., 2008; Devechi et al., 2012; Moore & Hammond, 2011; Savage & Carless, 2008; Tompkins et al., 2012; Vadasy, Sanders, & Peyton, 2006a; Ward, 2011). In terms of the educational levels in which the studies were conducted, 17 (28%) studies addressed pre-primary inclusive settings (below grade 1), 41 (67%) studies addressed primary inclusive settings (grades 1-6), and 30 (49%) studies addressed inclusive secondary settings, with 24 (39%) of the studies addressing multiple types of inclusive educational settings.

## Findings

The studies also were examined related the interrelated research questions addressing the: (1) roles of TAs in inclusive classrooms; (2) impact of TAs on students, educators, and inclusive education; and (3) factors that influence the performance of TAs working in inclusive classrooms.

**Research Question 1:** What roles are TAs assuming to support educators and students in inclusive classrooms?

Thirty-seven (61%) studies, conducted across all 11 countries, provided data related to the roles of TAs in inclusive classrooms. TAs reported that their non-instructional roles included performing administrative and clerical tasks (Devechi et al., 2012), providing personal care supports (Fisher & Pleasants, 2012), serving as an intermediary between teachers and students (Lehane, 2015), and monitoring students in non-classroom activities (Hughes & Valle-Riestra, 2008). Based on interviews with students with disabilities, Broer et al. (2005) identified the roles of TAs as being mother, friend, protector, and teacher.

The results of research also suggest that the TAs are performing significant pedagogical, assessment, socialization and behavioural roles (Carter et al., 2008; Groom & Rose, 2006; Healy, 2011; Howard & Ford, 2007; Keating & O'Connor, 2012; Liston et al., 2009; Wasburn-Moses et al., 2013; Webster & Blatchford, 2015), and making important decisions about the educational programs of students with disabilities (Cameron, 2014; Liston et al., 2009). For instance, Giangreco and Broer (2005) found that the majority of TAs surveyed reported that they make

teaching and curricular decisions without consulting teachers. Providing individualized and small group instruction to students with disabilities and managing student behaviours appeared to be the major instructional roles of TAs (Cameron, 2014; Carter et al., 2008; Gibson et al., 2014; Fisher & Pleasants, 2012; Harris & Aprile, 2015; Hughes & Valle-Riestra, 2008; Patterson, 2006; Webster & Blatchford 2013). For example, Webster et al. (2010) analyzed the timelogs of TAs, which showed that TAs typically spent more than 50% of the school day performing individualized and small group direct pedagogical roles with students with disabilities, and Suter and Giangreco (2008) and Giangreco, Suter and Hurley (2013) reported that their TAs spent approximately 75% of their time delivering instruction and providing behavioural supports, respectively. Two studies reported that TAs also are involved in teaching larger groups of students (Patterson, 2006; Suter & Giangreco, 2008). Other instructional responsibilities of TAs reported by TAs and educators included assessing student performance (Devecchi et al. 2012), fostering peer interactions (Carter et al., 2008; Gibson et al., 2014), facilitating information sharing among educators and with families (Fisher & Pleasants, 2012), preparing and adapting materials (Liston et al., 2009), advocating for students (Howard & Ford, 2007), and promoting self-determination skills (Lane et al., 2012). Studies examining the perspectives and experiences of students with disabilities regarding their experiences with TAs provide confirmation that TAs are performing these varied instructional roles, and assuming major responsibilities for educating students with disabilities (Rutherford, 2012; Tews & Lupart, 2008; Ward, 2011).

The extent to which TAs worked with students without disabilities was unclear. Although TAs reported that they worked with all students (Angelides et al., 2009; Howard & Ford, 2007; Liston et al., 2009; Logan, 2006), and educated classmates about how to be supportive of peers with disabilities (Dolva et al., 2011), Webster & Blatchford (2013) observed TAs interactions in inclusive classrooms and found that TAs rarely worked with students without disabilities.

Several factors appear to influence the roles of TAs in inclusive classrooms. Egilson & Traustadottir (2009) concluded that TAs performed varied roles due to unclear responsibilities as well as limited collaboration with and supervision from teachers. Brown and Stanton-Chapman (2014) found that the roles of TAs vary based on the setting, motivation of the TAs, and the receptivity of the teachers. The roles performed by TAs also appear to be affected by teachers and TAs having differing views of the roles of TAs in inclusive classrooms (Keating & O'Connor, 2012), with TAs viewing their primary roles as providing academic support to students with disabilities and teachers identifying the primary roles of TAs as aiding teachers in delivering instruction and managing student behaviour (Butt & Lowe, 2012). Appl (2006) concluded that age as well as experiential and philosophical differences are factors that impact the relationships between beginning teachers and TAs. Carter et al. (2008) found that the frequency of the roles performed by TAs was related to students' grade levels (i.e., primary versus secondary), and disability categories (i.e., high-incidence versus low-incidence). Takala (2007) noted that the roles of TAs may vary based on the age of the students with whom they work, and reported that TAs who worked with younger students spent more time performing instructional activities than TAs who worked with older students.

**Research Question 2:** How do the roles performed and supports provided by TAs in inclusive classrooms impact students, educators and inclusive education?

Twenty-one (34%) of the studies, conducted in 9 countries, provided data related to the impact of TAs on students, educators, and inclusive education. Several studies found that TAs performed roles that fostered student learning, teaching, and inclusion. Based on interviews and/or surveys, teachers noted that the availability of TAs had a beneficial impact on student learning (Haycock & Smith, 2011), job satisfaction, stress levels, and workloads (Webster et al., 2010); and teachers, students, parents, and administrators reported that TAs positively supported their school's inclusion of students with disabilities (Logan, 2006). Angelides et al. (2009) and Webster et al. (2010) observed that TAs performed roles that fostered the learning and socialization of students with disabilities including increased participation and engagement in instructional activities, decreased student off-task behaviour and disruptions, and greater socialization with peers.

However, studies employing observational and standardized assessment data predominately conducted in the United States and United Kingdom have raised concerns about the efficacy of TAs and the ways in which their ineffective and separate instructional practices and physical presence inadvertently undermine inclusion as well as the learning, socialization and independence of students with disabilities, and the pedagogical roles of their teachers. Observational studies reveal that: (a) TAs frequently taught students with disabilities separately in individual and small groups, which led to students with disabilities rarely being included in whole class instruction, spending less time in the classroom, and having fewer interactions with their teachers and classmates (Cameron, 2014; Webster & Blatchford, 2013; Webster & Blatchford, 2015); (b) students with disabilities who received the services of TAs were less likely to be independent, support the learning of their classmates, and socialize with classmates than students with disabilities who do not receive the services of TAs (Symes & Humphrey, 2012); and (c) TA proximity had a significantly negative impact on the number of interactions students with disabilities had with their peers (Malmgren & Causton-Theoharis, 2006).

The results of several studies also has shown that TAs do not employ effective teaching practices and have a negative impact on the academic performance of students with disabilities. Radford et al. (2011) and Rubie-Davis et al. (2010) analysed audio recordings of instructional activities led by teachers and by TAs, and found that there were significant differences in the quality of instruction provided by teachers and TAs, with teachers using more effective instructional practices that supported student participation, higher level thinking and independence, and TAs employing practices that focused on task completion and dependence on the TA. Angelides et al. (2009) observed TAs employing such inappropriate practices as completing work for students and providing students with unnecessary instructional and communication assistance, and Tompkins et al. (2012) reported that TAs failed to deliver lessons with fidelity and provided students with erroneous examples. Webster et al. (2010) found that there was a negative relationship between the academic progress made by students with disabilities and TA support, and that students who received the most support from TAs made less academic progress than their counterparts who received less or no support from TAs. Gray et al. (2007) reported that the reading support provided by TAs did not have a positive impact on the reading performance of "middle ability students" and appeared to have a negative impact on "lower ability readers".

Studies that involved interviews with students with disabilities regarding their experiences with TAs in inclusive classrooms were conducted in Australia, Canada, Iceland, New Zealand and the United States. Based on interviews with students with disabilities, Whitburn (2013) distinguished between light and discreet supports provided by TAs that

facilitated inclusion and heavy and authoritarian supports that compromised students' autonomy and hindered their learning and interactions with their teachers and classmates. Students with disabilities reported that although their TAs fostered their academic and social skills and social interactions with peers and were perceived positively by them and their classmates, the constant presence of TAs and the delivery of separate instruction served to limit students' interactions with their teachers and classmates and resulted in some students being viewed by their classmates as dependent and different (Egilson & Traustadottir, 2009; Rutherford, 2011; Tews & Lupart, 2008; Ward, 2011), which led some students to engage in behaviours that distanced themselves from their TAs (Rutherford, 2012).

**Research Question 3:** What factors influence the performance of TAs in inclusive classrooms?

Thirty (49%) of the studies, conducted in six countries, provided data that addressed the factors that influence the performance of TAs in inclusive classrooms. Numerous quasi-experimental and single subject design studies from Australia, United Kingdom and United States show that when TAs receive training and supervision in the delivery of research based practices, they can have a positive impact on the literacy development (Bingham, Hall-Kenyon & Culatta, 2010; Bowyer-Crane et al., 2008; Fried, Konza, & Mulcahy, 2012; Lane, Fletcher, Carter, Dejud, & Delorenzo, 2007; Lushen, Kim, & Reid, 2012; Moore & Hammond, 2011; Savage & Carless, 2005; 2008; Vadasy, Sanders, & Peyton, 2005; 2006a; 2006b; Vadasy, Sanders, & Tudor, 2007) and social and behavioral performance (Cooke, Galloway, Kretlow, & Helf, 2011; Feldman & Matos, 2013; Lane et al., 2007) of pre-primary and primary level students with disabilities or at-risk students.

TAs identified having effective communication and collaboration, role clarification, planning time with supportive teachers, targeted professional learning for them and the teacher with whom they work, and being observed by and receiving feedback from other professionals as critical factors contributing to their efficacy (Angelides et al., 2009; Brown & Stanton-Chapman 2014; Cockroft & Atkinson, 2015; Docherty, 2014; Keating & O'Connor, 2012; Liston et al., 2009; Symes & Humphrey, 2011; Wasburn-Moses et al., 2013). Devecchi and Rouse (2010) found that effective teams of TAs and teachers supported each other by sharing information about students and lessons and teaching practices, having clear and flexible roles, and being respectful, knowledgeable, and approachable professionals.

However, TAs reported that their performance was hindered by unclear and inconsistent guidelines regarding their job responsibilities, sporadic opportunities for professional learning, a lack of communication with teachers regarding students and lesson planning and implementation, and limited supervision and performance feedback (Cockroft & Atkinson, 2015; Docherty, 2014; Egilson & Traustadottir, 2009; Fisher & Pleasants, 2012; Howard & Ford, 2007; Lehan, 2015; Logan, 2006). Other factors identified as negatively impacting the performance of TAs are feeling underappreciated (Brown & Stanton-Chapman, 2014; Symes & Humphrey, 2011) and underpaid (Fisher & Pleasants, 2012; Patterson, 2006), having heavy workloads (Devecchi et al., 2012), and receiving little supervision from teachers (Giangreco, Suter, & Hurley, 2013).



## Discussion

This article reviewed international data from English-language peer-reviewed studies on the use of TAs in inclusive classrooms and summarized the interrelated findings from the past 10 years concerning: (a) the roles of TAs; (b) the impact of TAs on students, educators, and inclusive education; and (c) the factors that influence the performance of TAs. The results of studies conducted in all 11 countries addressed the roles of TAs suggested that in addition to supporting teacher-directed instruction and performing a variety of non-instructional roles, TAs are assuming significant instructional, classroom management, and socialization roles, making important curricular decisions regarding the education of students with disabilities, and teaching them in separate locations. Self-report data collected from teachers and administrators in Ireland and the United Kingdom suggest that TAs can support teaching and inclusive education along with students' academic, social and behavioural performance. Interviews with students with disabilities conducted in Australia, Canada, Iceland, New Zealand and the United States indicate that these students report having positive and negative experiences with TAs. However, a significant number of studies, predominately conducted in the United Kingdom and the United States, provide observational and standardized data suggesting that the ineffective and separate instruction delivered by untrained and unsupervised TAs as well as their constant physical presence inadvertently undermine the inclusion, learning, socialization and independence of students with disabilities, and the pedagogical roles of their teachers. Although studies conducted in the United States, United Kingdom and Australia show that TAs who are well trained and supervised to deliver effective instruction can foster student learning and pro-social behaviour, the results of numerous studies conducted in those countries and Cyprus, Iceland and Ireland identified unclear professional roles, and limited communication and opportunities for collaboration, training, supervision and professional learning as major factors hindering the impact of the work of TAs. These findings are consistent with previous reviews and extend previously published reviews of the literature on the use of TAs in inclusive classrooms by including more recent studies and those from several countries.

## Implications for Practice

The results of the research reviewed suggest that the deployment of TAs internationally does not consistently reflect best practices and continues to be characterized by unclear roles, limited communication between and inadequate training for teachers and TAs that leads teachers to cede major responsibilities for the education of students with disabilities taught in inclusive classrooms and TAs to assume them. There appears to be a misalignment between regulations defining the roles and responsibilities of TAs as supporting teachers and students in inclusive classrooms, and the actual major pedagogical roles performed by TAs. As a result, students with disabilities are often being taught separately from their classmates, and are having fewer instructional interactions with their teachers and fewer social interactions with their classmates.

Therefore, there is a need for countries and school districts to examine the efficacy of their practices and policies related to the use of TAs in inclusive classrooms to determine if the use of TAs in inclusive classrooms is an effective and appropriate way to support educators and students in inclusive classrooms (Giangreco, Doyle, & Suter, 2012). Primarily, the effectiveness of the policies and practices implemented should be assessed by collecting standardized and

classroom-based data that examines the extent to which they foster positive academic, social, and behavioral outcomes for students. Observations of educators, TAs and students can be employed to assess whether educators and TAs are performing appropriate roles, using effective practices, working with students in inclusive locations, interacting with all students, and fostering students' autonomy and interactions with peers. Via surveys and interviews, TAs, students with and without disabilities, and educators can share their perceptions of the policies and practices implemented, identify successful and unsuccessful aspects, and make suggestions for improving them.

Based on the data collected, countries and school districts can make informed decisions about whether to pursue alternatives to the overreliance and use of TAs or to view the use of TAs as a viable solution to supporting students and educators in the inclusive classrooms that needs to be continued and improved. Giangreco and his colleagues have identified alternatives to the use of TAs such as employing co-teaching, peer-supports, and dually-certified teachers, and making changes in resource allocation and working conditions, and have developed guidelines and a 10-step self-assessment model that school districts and departments/ ministries of education can employ to determine appropriate alternatives to the use of TAs (Giangreco, 2013; Giangreco, Broer, & Suter, 2011; Giangreco et al., 2012).

If countries and school districts decide that the use of TAs should be continued and enhanced, it is important to adopt and implement policies that ensure that TAs and the educators who work with them understand each other's roles and responsibilities, communicate and collaborate to support each other, are trained and receive the supports necessary to perform their respective roles, and collect data to monitor their efficacy. It is essential that countries and school districts clarify the appropriate roles and responsibilities of TAs and educators to make sure that TAs perform a range of non-instructional roles and limited supervised complementary instructional roles that are aligned with educational laws and regulations, and commensurate with their training and qualifications. Also of importance is that educators understand it is they who have the responsibility to educate all students, to treat TAs respectfully, to supervise TAs and provide them with feedback, and to take actions to help TAs perform their jobs effectively (Salend, 2016; Sharma & Loreman, 2014). Countries and school districts also need to ensure that TAs and educators have sufficient opportunities to communicate regularly to discuss students' progress, evaluate short- and long-term goals, share information and feedback, identify successful practices, address problems, and brainstorm solutions.

The results of research suggest that TAs who are well-trained and supervised can foster the success of students in inclusive education settings (Bingham, Hall-Kenyon & Culatta, 2010; Lushen, Kim, & Reid, 2012). However, few educators are taught in their teacher preparation programs to work effectively with TAs in inclusive classrooms (Radford et al., 2015; Sharma & Loreman, 2014; Webster et al., 2010). Therefore, both TAs and educators would benefit from training that helps them understand and acquire the skills to perform their various roles and to communicate and collaborate effectively (Douglas et al., 2016; Radford et al., 2015; Webster et al., 2010).

The use of TAs in most countries is likely to increase in future. For example, in Australia a large number of schools deploy teaching assistants (commonly referred to as integration aides) to support learning of students with disabilities. The use of TAs will increase as national policies and legislation (such as the Education Standards of the Disability Discrimination Act) and progressive implementation of the National Disability Insurance Scheme (NDIS) come into full force Australia-wide. The current paper identified a few core issues that may be useful for policy

makers and the Departments of Education across Australia to carefully consider if the true intention of supporting all learners with disabilities are to be achieved. As increased funding becomes available (as a result of NDIS and other similar schemes), it is critical that TAs as well as educators are trained well to ensure that they provide high quality programs to all learners (Chambers, 2015). The paper provides a number of guidelines about how best the TAs could work in inclusive classrooms to support learning of students and also supporting teachers that policy makers and university educators from Australia and other countries may find useful.

## **Limitations**

The findings of this review should be interpreted with several cautions. First, although a systematic search and selection methodology was employed to identify the studies that were included in this research synthesis, it is possible that peer-reviewed studies that met the inclusion criteria may have not been identified. Since the studies reviewed were conducted in 11 different countries with varying cultural and educational contexts (e.g., national versus state run education, differing percentage of students with disabilities in general education settings, different cultural norms), it is difficult to make comparisons and interpretations of the findings across countries.

## **Suggestions for Future Research**

The research base relating to TAs in inclusive classrooms is characterized by the use of qualitative research designs, relatively small sample sizes, and self-reports that focus on the perceptions of participants, who are mostly TAs. There is a need for studies that have larger samples, more varied participants (i.e., students with and without disabilities, secondary level students, and educators, administrators, family members), are conducted in a range of different countries, and additional data sources such as observations, audio recordings, timelogs and artifacts to verify participants' perceptions. There also is a need for experimental and single subject design studies across countries that employ standardized and classroom-based assessments to identify the practices of teachers and TAs that lead to positive academic, social, and behavioural outcomes for students with disabilities and their classmates.

There was a limited number of studies examining the perceptions of students with disabilities regarding their experiences with TAs. Since the participants in those studies were predominately students with intellectual disabilities, studies examining the perceptions of students with other disability conditions and students without disabilities are warranted. It would be interesting to see if the experiences of students with high incidence disabilities differ from those of students with low incidence disabilities as well as how students without disabilities view the roles, efficacy, and presence of TAs in their classrooms. We could not locate any research that has looked at parental perspective about the use of TAs. It would be useful to examine parental perspective about how TAs may be used with their children and if their views are consistent with the effective use of TAs in inclusive classrooms. This research is critical considering in many countries parents advocate for the use of TAs and can influence the way TAs work with their children. There also is a need for to examine the extent to which the roles of TAs working at different grade levels (pre-primary, primary and secondary) and with different

disability categories (high incidence, low incidence) differ. Since the studies demonstrating the efficacy of trained TAs involved researcher-delivered training and TAs working in pre-primary and primary level settings, there is a need for research that examines the impact of teacher-delivered training to TAs and assesses the impact of trained TAs on students in secondary level settings. In light of the limited preparation that teachers receive to work effectively with TAs in inclusive classrooms, there is a need to systematically examine ways teacher education programs can better prepare prospective teachers to collaborate with, support, train, and supervise TAs to perform appropriate and complementary roles that foster inclusion, and support teaching and student learning and socialization. Given the the continued concerns about the deployment of TAs, there also is a need for research to develop and validate alternatives to the use of TAs that school districts can employ.

## Summary

Internationally, the movement toward the inclusion of students with disabilities in general education classrooms has led to an increase in the deployment of TAs. However, the results of this research review suggest that due to the important teaching and curricular roles they are asked to perform, the minimal opportunities they have to collaborate with the educators with whom they work and the inadequate training and supervision they receive, TAs in many classrooms inadvertently serve to undermine the goals of inclusive education. The overreliance on untrained and unsupervised TAs tends to inadvertently: (a) supplant the roles of teachers and lessens their contacts with students with disabilities and responsibility for educating all students; (b) hinder the academic performance of students with disabilities as well as their interactions with classmates; and (c) promote the stigmatization, isolation and dependency on adults of students with disabilities. Countries, school districts and researchers need to examine alternatives to the use of TAs in inclusive classrooms as well as develop policies and practices that enhance the effectiveness of TAs in inclusive classrooms. If TAs are to be employed in inclusive classrooms, they and the educators with whom they work also need to be provided with training that helps them understand their responsibilities and acquire the skills to perform their respective roles with fidelity and efficacy.

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